



Analysis of Modeling & Simulation

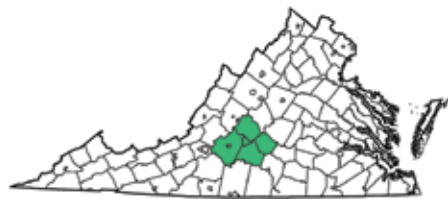
REGION 2000 (LYNCHBURG)

REPORT SUMMARY
The ASTA Group, LLC • November 2014

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Region 2000 (Lynchburg) Overview



Region 2000 has a core of connected organizations, yet does not have a regional M&S network. Diversity in the local economy promotes resiliency. Region study participants would like to create the critical mass in M&S necessary to draw in more skilled workers, while controlling and planning for growth in the region.

Asset Summary

Twelve M&S assets were identified within this region. They include mostly commercial businesses, with a small university and research lab presence.

Economic Impact

The M&S contribution to the regional GRP is estimated at \$265-\$301 million. The total economic impact of M&S on the regional economy is estimated at \$476-\$535 million.

Growth projections for M&S industry sectors within the Region 2000/Lynchburg area range from 15% to 20% through 2020. Analyses project that the region will add 17 to 20 new M&S specific jobs from 2011-2020.

Market

Energy, healthcare and manufacturing M&S companies are strong in this region. There is promising academic growth with the STEM Academy at Central Virginia Community College, and the newly implemented mechatronics and biomedical engineering programs. Securing R&D funding is the primary obstacle encountered when bringing new products or services to market.

Industry Sector	Total Employment	M&S Specific Employment
Total Region 2000 Employment	134,481.95	
Total Region 2000 Employment, M&S Related Sectors Only	9,546.56	95.47
Pharmaceutical Preparation Manufacturing	4.44	2.27
Other Commercial & Service Industry Machinery Manufacturing	0.00	0.04
Ship Building & Repairing	3.52	0.00
Software Publishers	371.65	0.04
Telecommunications	7.18	3.72
Other Information Services	3,252.99	0.07
Architectural, Engineering & Related Services	519.36	32.53
Custom Computer Programming Services	234.93	5.19
Computer Systems Design Services	11.39	2.35
Other Computer Related Services, Including Facilities Management	347.39	0.11
Management, Scientific & Technical Consulting Services	190.41	3.47
Scientific Research & Development Services	171.68	1.90
All Other Miscellaneous Professional, Scientific & Technical Services	506.74	1.72
Other Private Educational Services	3,697.46	5.07
Private Hospitals	227.42	36.98

Bold text indicates core sectors of the M&S industry.

Regional Employment in M&S

This table includes estimates for total employment in the region, for employment in M&S related sectors, and estimates for employment in each individual industry sector analyzed in this study.

As shown in the table, although estimated at lower weights, the related sectors of *Architectural, Engineering & Related Services* and *Private Hospitals* have significantly higher estimates for M&S employment in the Region 2000/Lynchburg area than any of the primary sectors.

Also shown in the table, about 7% (9,546.56) of the region's total industry employment (134,481.95) is comprised of employment in the M&S related sectors. Approximately 0.07% to 0.08% of the total for M&S related employment is actually M&S specific in each sector, so at a minimum, 95 jobs in the related sectors are specific to M&S. For example, of the 519 jobs in *Architectural, Engineering & Related Services*, only 32 are M&S specific.

M&S Workforce

The lack of a workforce qualified and trained in M&S is seen as a key regional issue. Employers must train specific skills, particularly design skills. The local workforce is aging, and businesses are beginning to face workforce recruitment issues.

M&S Networking and Collaboration

Extensive networking and collaboration takes place here; however, it is not regional, but rather national and international. Universities have limited collaboration with local companies. The businesses have limited awareness of university engineering programs, and the universities have limited awareness of business workforce needs.

Solutions

Stakeholders would like to see the incorporation of training simulators in colleges, and funding for power plant operations or a fundamentals course that includes simulation and interactive eBooks. They suggest the formation of an M&S Round Table through the Technology Council. They would like to work with the Center for Advanced Engineering and Research (CAER) to establish a regional collaborative mechanism.



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Report Description

This report provides regional highlights of a 2013 study undertaken to assess the state of Modeling and Simulation (M&S) within Virginia, analyze its economic impact, and identify projected growth areas. The study produced an inventory of Commonwealth M&S assets, a survey of M&S business regionally, economic analyses of the M&S sector and workforce, and a meta-analysis of previous studies. Focus group interviews were held in each Commonwealth region to provide insight and information about M&S. Participating stakeholders represented academia, government and industry. Impact Analysis for Planning (IMPLAN®) and United States Bureau of Labor Statistics data were used for the economic and workforce analyses. The full report can be found online at the following websites:

ModSim Connected: modsimconnected.com

Secretary of Technology: technology.virginia.gov

